

Report of Fisheries Investigations

Basic Survey and Inventory of Fish Species in Striker Creek Reservoir

by

John N. Dorchester
Assistant Project Leader

Dingell-Johnson Project F-3-R-5, Job B-12
June 1, 1957 - May 31, 1958

H. D. Dodgen - Executive Secretary

Texas Game and Fish Commission
Austin, Texas

Marion Toole
Coordinator

William H. Brown
Asst. Coordinator

SEGMENT COMPLETION REPORT

Investigations Project

State of TEXAS

Project No. F3R5

Name: Fisheries Investigations and Surveys of the Waters of Region 5-B.

Job NO. B-12

Title: Basic Survey and Inventory of Fish Species in Striker Creek Reservoir.

Period Covered: June 1, 1957 to May 31, 1958

ABSTRACT:

Lake Striker is a new 2300 surface acre lake on which a year long basic survey was conducted. Water samples and temperatures were taken at three locations on the lake and at five foot intervals from surface to bottom. There were 1000 feet of experimental type gill nets set randomly each month. The water quality proved to be poor for biological productivity even though there was an excellent growth rate on fishes the first year. There are large populations of gizzard shad, largemouth bass, both species of bullheads and suckers present. Recommendations are made to continue this survey to see what effects the water quality has on the condition of the fish.

OBJECTIVES:

To gather fundamental data on this newly impounded reservoir in regard to its physical, chemical and biological aspects. To determine the growth rates and food of game species stocked. To observe the influx of other fish species and to record chemical changes, if any, of the water.

ACKNOWLEDGEMENTS:

This writer wishes to thank the Angelina and Nacogdoches Counties Water Control and Improvement District No. 1, Ned Shands, Jr., president, the Texas Power and Light Company, and Mr. Joe Brown, lake concessionaire, for their cooperation and interest in this project.

LAKE HISTORY:

Lake Striker was first conceived back in 1953 when the Angelina and Nacogdoches Counties Water Control and Improvement District No. 1 considered the construction of several water storage projects on the Angelina River and its watershed. The Texas Power and Light Company already had a small power plant located on Striker Creek and they let it be known that they wanted to expand their generating capacity in the near future. So between these two organizations plans were made and

construction was begun in 1956. The gates were initially closed about May 15, 1957 and after being raised and lowered several times for testing purposes they were finally closed on June 5, 1957 and water was beginning to be impounded. Almost immediately after the final closing of the gates torrential rains fell on the watershed and the lake filled to within five feet of its normal level. The Tyler Fish Hatchery then stocked the lake with largemouth bass and channel catfish. On June 10, 1957, just five days after the gates were closed, the first work on this job was initiated.

Original plans called for eradicating the existing fish population in Striker Creek before impoundment. However, when the time came to do the job the creek was out of banks and it was decided that the volume of water was too great for any success.

LAKE DESCRIPTION:

Lake Striker was formed by an earth-filled dam located about 1400 feet upstream from Farm Road 839 and about one mile southwest of New Salem. The lake lies on the Cherokee-Rusk Counties line. Other nearby towns are Rusk and Jacksonville to the west, Reklaw to the south and Mount Enterprise to the east. The dam is 2400 feet long and 41 feet high. A service spillway is located on the east end of the dam where the gates are also located. An emergency spillway is located at the west end of the dam. At an elevation of 292 feet mean sea level the reservoir area is 2340 acres and the reservoir volume is 26,500 acre feet. At this same elevation the discharge from the service spillway is 15,100 cfs.

The watershed above the dam is located in Rusk, Cherokee and Smith Counties and covers an area of about 183 square miles. The land is used primarily for timber, farming and cattle. Soils found in the area are generally sandy clay on the uplands and alluvial soils in the bottoms. Natural resources include oil, gas, lignite and timber. The northern part of the watershed forms part of the East Texas Oil Field.

Striker Creek, which is a tributary of the Angelina River, rises in Smith and Rusk Counties and flows southward. The lake site is typical of East Texas stream valleys, that is it is wide and has a flat gradient and mostly covered with timber. The lake is about one mile in width and the lake bed has a fall of about two and one-half feet per mile. The slopes on the sides of the reservoir are fairly steep and are covered with timber with the exception of one section on the east side which is rolling meadow land. Only about one-half of the timber was cleared which leaves some 1100 to 1200 surface acres of open water. See Figure 1.

PROCEDURE:

Data was collected once each month, generally close to or on the 10th of each month, during this job. No collection was made in November 1957 due to the heavy rains at the time which made all roads to the lake impassible. Water samples and temperatures were taken in the afternoons about the same time of day each month. There were six net sets made each month at randomly selected locations. Seining collections were also made at randomly selected locations.

1. Limnological Data

Water samples were taken with a Foerst water sampler at five foot intervals from surface to the bottom. The samples were put in 250 ml glass-stoppered bottles, one for dissolved oxygen which was fixed on the spot, and one for alkalinity, pH and salinity. The latter was brought back to the laboratory for analysis. There were three water sample stations set up on the lake to make a series of three for each trip. The first station was located near the center of the dam, the second up the lake about midway between the TP&L powerhouse and the concession, the third location was toward the upper end of the open water. An occasional sample was taken at the extreme upper end of the open water. (see map for locations)

Temperatures were taken at the same locations as the water samples. A reversing thermometer was used. Again data was collected at five foot intervals from surface to bottom. The thermometer was calibrated in degrees centigrade so this data was converted to degrees Fahrenheit by using the conversion table found in Lagler's STUDIES IN FRESHWATER BIOLOGY.

Other limnological conditions recorded were turbidity (Seechi disk), color of the water, sky, wind, time and air temperature.

2. Netting Collections

Eight experimental type gill nets were set at six random locations each month. The dimensions of the nets were 125 feet long, eight feet deep with mesh sizes of 1, $1\frac{1}{2}$, 2, $2\frac{1}{2}$, and 3 inches. The nets were set out late in the afternoon and picked up the following morning. Each location was selected with the idea of having each set in a different type of location, i.e. open water, set across a small neck, off a point, in the timber etc. In this way a sample was made of each habitat in an effort to get a true picture. A total of 66 sets made up of 88 nets were made.

A count was made of all rough fish caught. They were destroyed and returned to the lake. All game fish and bullhead catfish were saved. These were then measured (both standard and total lengths) and weighed. Spot checks were made on stomach contents and sexual developments. Coefficients of condition ("K" factors) were determined in the laboratory. The average lengths, weights and condition factors were calculated for each species each month.

3. Seining Collections

Seining collections were made with a 26' by 6' by $\frac{1}{4}$ " mesh bag seine. The original idea to make at least ten drags at various locations proved to be too ambitious at times. Seining areas were difficult to find because of the nature of the shoreline of the new lake - heavy wave action and cold, freezing weather cut down collections. However, 81 drags were made to represent 9 collections. All specimens were preserved in 10% formalin solution and brought back to the laboratory for identification.

STOCKING RECORD:

The Game and Fish Commission's Tyler Hatchery placed approximately 175,000

largemouth bass fry and 65,000 channel catfish fry in the lake in June 1957. Additional stocking was made on September 27, 1957 when 2,600 channel catfish fingerling, 3,500 black and white crappie fingerlings and 500 redear and blue-gill sunfish were placed in the lake. A few flathead catfish have been put in the lake by fishermen.

FINDINGS:

1. Limnological Findings

One of the primary objectives of this job was to record any chemical changes which might occur in the water. It was determined that chemically and physically the waters of Lake Striker vary greatly from month to month, area to area and even at different depths within an area. The contributing factors involved are runoff from rains, high winds or no wind at all, sources of runoff water and decaying vegetation.

a. Methyl Orange Alkalinity and pH

Table 1 gives the alkalinity and pH for each depth and location on the lake by months. An attempt to closely correlate these figures would be extremely difficult, however, this general statement can be made on the correlation of alkalinity and pH - when pH goes up the alkalinity goes up and when pH comes down the alkalinity comes down. That was to be expected though. The range of pH was from a low of 5.0 to a high of 7.1. The extremes of alkalinity are 3 ppm to 60 ppm. Generally though, the pH started off low in June (around 6.0) and gradually built up to the high in October (7.0 - 7.1). After heavy rains in November the pH started dropping off to a low of 6.1. Again it started a small rise after the spring rains. The low pH's of 5.2 were found in February at the upper end of the lake. Some months the pH was higher on the bottom than the surface and other months it was lower. According to Table 1 the lake evidently tended to stratify in late spring then tends to be homogenous throughout the remainder of the year with variations only on the bottom. This is referring to pH.

Methyl orange alkalinity over the year pretty much varied parallel to pH - it started low and rose to a peak in October, fell sharply after the fall rains, then stayed low with slight monthly variations the rest of the year. The alkalinity stayed pretty constant from top to bottom. The extreme low of 3 ppm was found in the extreme upper end of the open water in February. It should be pointed out that the low alkalinity found in this lake is not very conducive for biological productivity.

b. Chlorides

The chlorides ranged unusually high - from a low of 85.104 ppm to the high of 425.520 ppm. Most often the range was from approximately 127 to 255 ppm. It was noted that the chlorides nearly always were higher on the bottom of the lake than the upper levels. This is due to the greater density of saline water. Table 2 gives the chlorides for each depth and locations. The upper end of the lake was generally always more saline than the middle and lower ends. Over the year, the chlorides rose gradually to a peak in September where it stayed until December, when the fall rains dropped it slightly. It continued down until March where it rose sharply through April then dropped to the all time low.

The normal chloride content for water in the same area is less than 50 ppm. The source for this high salinity is evidently the East Texas Oil Field. Though the high chlorides possibly will not harm the normal fish life in the lake, it might be somewhat corrosive to steel boiler plates and plumbing.

c. Temperature and Dissolved Oxygen

Table 3 shows the temperatures and dissolved oxygen at the five foot intervals from surface to bottom and at the three locations on the lake for each month. Also the air temperature is given. Most of the time the temperature followed the usual pattern of being cooler as the depth increased. The temperature change was only slight during the winter months. It was noted that on some occasions the surface temperatures were a little cooler than at five feet. This was always when the wind was blowing so this writer believes that the increased evaporation caused by the wind was the reason for this cooler water. It was also noted that the waters near the dam were slightly warmer than midlake water. This is possibly due to the heat retention characteristics of the earthen dam causing the water to be warmer. Surface temperature ranged from 45.7 to 97.2 degrees Fahrenheit.

Dissolved oxygen followed no particular pattern as it very seldom was uniform over the lake. During the early months of the lake there was an oxygen deficiency at the lower depths due to decaying vegetation. The range was from 0.8 to 12.6 ppm. The lake appeared to be turning over in March as the temperature change was little and the dissolved oxygen was higher on the bottom than the upper five feet.

Air temperature, at the time of taking water samples, ranged from 43.2 to 99.0 degrees Fahrenheit. Invariably during the winter months a cold front would move through dropping the temperature to below freezing the following morning.

d. Turbidity

Turbidity varied directly with the inflow of runoff water into the lake. Striker Creek is an extremely clear stream with no color during normal conditions. The lake started off with a turbidity of approximately 18 inches Seechi and decreased each month through October when it was 5 feet Seechi. Then the fall rains brought in suspended solids and brought the turbidity up to 3 feet S. It remained 3 - 4 feet until the spring rains when it rose back to 20 inches.

During February there was an unusual situation in the lake. At the upper end of the open water portion of the lake the water was extremely clear (turbidity 10 feet Seechi) and a bluish-green in color. This water extended out from the timber for 50 to 100 yards then abruptly changed to the greenish-brown color of the rest of the lake. This water had an extreme low pH and alkalinity and high salinity. The next month this clear water had moved on down through the entire lake and was a beautiful green in color but more turbid because of a beginning of a plankton bloom. There was great concern over this apparent infertile water condition. The spring rains seemed to improve the quality though probably just temporarily.

e. Water Samples from the Tributaries

In an attempt to find the source of the poor water coming into the lake, water samples were taken at nearly all road crossings on the tributary streams. Samples

were taken at the headwaters of Striker Creek where the water was observed coming out of the ground. Even here the poor quality was found. Table 4 gives the location of each collecting point and the analysis of the water.

2. Fish Findings

Both netting and seining collections yielded thirty eight species of fish representing twelve families. Table 5 list each species phylogenetically as taken from Hubbs', A CHECKLIST OF TEXAS FRESHWATER FISHES, dated February 1957.

a. Netting Results

Table 6 gives the number of fish collected by nets each month. As can be seen by this table there were only three species collected every month. They are the gizzard shad, largemouth bass and black bullhead. This table also gives the totals of game fish and rough fish and percentage of each. There were 19 species collected by gill nets - 10 rough species and 9 game species. The rough fish catch predominated the game fish catch every month except one (that was due to the high bluegill catch). The average percentage of rough-game fish was roughly 74-26% over the year. Rough fish seem to be more active than game fish in the winter months than summer months as concluded by the high percentage of those caught.

A total of 1918 fish were caught by gill nets over the year. This includes 1426 rough fish and 492 game fish. Gizzard shad had the highest numbers with 574 being caught. Black bullheads were next with 324. Largemouth bass ran in fifth place and tops of the game fish with 149 being caught. The number of species caught each month ranged from 7 to 15 and averaged about 10.

Relative abundance would be rather meaningless in this case because some species were not caught during the winter months. An indication could be gotten from only eight species and this would not give a true picture of the populations in the lake. This being the case only the percentages and numbers of those fish caught by nets are given for a rough comparison. Figure 2 illustrates this graphically. From the fish that were caught indicates that the most abundant rough fish present, besides bullheads which have a commercial potential, are the chub suckers and spotted suckers. Gizzard shad are considered a forage fish in some instances.

b. Seining Results

Table 7 gives the numbers of fish collected by the bag seine each month. Seining yielded 28 species and a total of 7322 specimens. By far the most abundant species according to the collections was brook silversides. However, this may not be an actuality in the lake because 3299 were collected in one month. The spottail shiner was the only species showing up every month a collection was made. Silversides and bluegill missed one month and several missed two months. It is interesting to note that bass, bullheads and several sunfish were picked up as fry in seining collections the first month or two then were picked up only in nets.

The number of species collected each month ranged from 4 up to 19 and averaged 12.

It can be concluded from seining that there is a good supply of bait or forage.

fish available, the most abundant of which are spottail shiners and golden shiners. It should be noted that some minnow species showed up strong at first but later decreased in numbers to only a few or none. Others began to show up later in the segment.

c. Growth Rates

Standard length records were kept on five game species and two rough species (important commercially) to determine growth. Insufficient numbers of other game species were collected from start to finish of the project to give a good picture. The best data was collected from the bass and bullhead. All of these specimens were measured if the numbers were below 25 and if over 25 specimens were selected randomly for measurement. An average length was determined each month and plotted on the graphs, Figures 3 and 4. As can be seen by studying these charts that there was a rapid growth through September then a tapering off period - except bass which maintained their growth through February. Many fishermen were amazed at the rapid growth of the bass. The first month of collection there were two distinct size groups of the bass - one the hatchery stock and the other the natural stock. However, the next month no groups could be distinguished. Table 8 gives the standard length ranges and average length for these seven species of the same age group.

d. Condition of Fish

Generally speaking the condition of the fish in Lake Striker during the first year is excellent. Table 9 gives the average standard length, the average weight and the average coefficient of condition for the entire year for several species. These are for netted specimens. The sunfishes and crappie were in the best condition due to the large fauna of invertebrates present.

e. Food Habits

No intensive study was made of the food habits of the fish in Lake Striker. Spot checks were made however of several game fish to get an idea of the main diets of each species. The majority of the stomachs checked were empty. The major diet of the bass was bluegill, shad and an occasional sucker, crayfish or water beetles. Bluegills ate aquatic insects and larvae, crappie ate small shad and insects, war-mouth ate crayfish, insects and some unidentified fish.

f. Sexual Development and Spawning Activity

Like the food habits no intensive study was made of sexual development. Spot checks were made on some game fish. In October all bass checked were immature. Those bass checked in January were approaching ripeness and had progressed little by February. Most of the bass were fully ripe and nearing a spawn when checked in May. Some, however, were still immature.

Nearly all the sunfish were very gravid in May and some were gravid even in early spring.

Several spawning areas were observed in May and indications are for a good spawn of all fish.

Many of the rough fish, such as the suckers and carp were gravid in March and April and evidently spawned before the game fish. The bullhead catfish were just approaching ripeness in May which indicates they will spawn later in the summer.

g. Annotated Checklist

1. Lepisosteus productus - this is the only species of gar found in the lake. Though not uncommon they are no problem at this time. None were captured during December, January or February.
2. Amia calva - only three specimens of this species was collected. They seemed to disappear after October.
3. Dorosoma cepedianum - this is the most common species collected, making up about 30% of the total.
4. Esox americanus - only two of this species seining in the early stages of the lake. Later three were caught by nets in March.
5. Moxostoma poecilurum - This species is not too common.
6. Minytrema melanops - though not out of control this species showed up heavily during late winter.
7. Erimyzon sucetta - this is one of the more common species in the lake. They have a possible interest for commercial fishermen.
8. Cyprinus carpio - most of the carp found were of large size (over two pounds) and should make some good fishing for those who fish for carp.
9. Notemigonus crysoleucas - this is one of the most common bait fishes and they have remained small in size so they can be utilized by game fish.
10. Notropis fumeus - this is the most common species of this family according to numbers collected, however, they were found only until September except for two in May.
11. N. umbratilis - only one group of these were found in January.
12. N. brazosensis - just one specimen of this fish was found in April.
13. N. roseus - this is another species that was found only in the early stages of the lake.
14. N. blennius - one specimen found the first month.
15. N. venustus - every month this species was found and in good numbers. One of the most important bait species.
16. N. lutrensis - was found every month except two.
17. N. deliciosus - another species that is fairly common.

18. N. atrocaudalis - found only twice - August and October.
19. N. volucellus - two specimens were found in May.
20. Pimephales vigilax - picked up throughout the year but not in large numbers.
21. Ictalurus punctatus - stocked by the state hatchery and not found again until May.
22. I. melas - found every month and in large numbers, second only to shad. Good commercial fish.
23. I. natalis - though not as common as black bullhead this species is quite numerous.
24. Fundulus chrysotus - this topminnow is not too common. Most were found the first few months.
25. F. notatus - found in every seining collection except one.
26. Gambusia affinis - quite numerous especially in the early months of the lake.
27. Labidesthes sicculus - very abundant, over three thousand caught one month.
28. Micropterus salmoides - this popular game fish has done remarkably well. There are large numbers of this fish in the lake and they are of a good size.
29. Chaenobryttus gulosus - there are good numbers of this species present and all are very fat.
30. Lepomis cyanellus - the greatest numbers of this species were caught the first month. They were rare after that.
31. L. punctatus - this native species is fairly common.
32. L. microlophus - though the hatchery stocked the lake with this species only four have been recovered and they were small.
33. L. macrochirus - this is the most common species of sunfish and so far they have been in good condition.
34. L. auritus - this brightly colored fish was more common in the early months of the lake.
35. L. megalotis - only five of this species was collected.
36. Pomoxis annularis - this popular game fish is rare, only three have been caught.

37. P. nigromaculatus - the waters of the lake are more suitable for this species than the white. They were caught nearly every month. One weighed 1 pound 11 ounces.

38. Etheostoma gracilie - only two of this species were captured in September.

3. Vegetation

During this segment aquatic vegetation was no problem. The first traces of vegetation showed up in August when small patches of smartweed (Polygonum sp.) were observed. There were also growths of filamentous algae. However, the fall rains evidently killed out the smartweed as none was observed again. No other aquatic vegetation was seen until May when several scattered patches of parrot feather (myriophyllum brasiliense) were seen. This is a potential problem. The only other aquatic plant present is black willow (Salix nigra) which was in the original creek bottom.

CONCLUSIONS AND RECOMMENDATIONS:

During Lake Striker's first year of existence the growth of the game fish has been remarkably good. Though the rough fish population far outnumbers the game fish population, there are sufficient game fish present to support a good sport fishery. There is also a good commercial fishery potential.

The water quality of the lake tends to be very poor biologically speaking. If the quality does not improve both fisheries may drop off considerably. Aquatic vegetation is no problem at this time.

Considering the above conclusions it is therefore recommended that:

1. Sport fishing pressure be kept high.
2. The lake be kept closed to commercial fishing except that contract fishing be allowed but then under close supervision of the Game and Fish Commission.
3. Any growths of aquatic vegetation be kept under control before it gets out of hand and becomes too expensive to control.
4. Efforts should be made to improve the quality of the water running into the lake from the East Texas Oil Field.
5. Additional data should be collected to determine the effects of the poor water quality on the fish present.
6. It should be kept in mind to stock the lake with white bass (Roccus crysops) in later years if needed to utilize the shad population and to maintain the sport fishery.

Prepared by: John N. Dorchester
Assistant Project Leader

Approved by: Marion Toole
Chief Aquatic Biologist

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Table 1 : METHAL ORANGE ALKALINITY AND PH AT DIFFERENT DEPTHS AND LOCATIONS ON LAKE STRIKER

Depth	June		July		August		September		October		November		December		January		February		March		April		May	
	pH	Alk	pH	Alk	pH	Alk	pH	Alk	pH	Alk	pH	Alk	pH	Alk	pH	Alk	pH	Alk	pH	Alk	pH	Alk	pH	Alk
0			6.4	30	6.6	42	6.8	50	7.0	60			6.4	10	6.2	14	6.2	10	6.1	5	6.4	6	6.4	13
5	6.0	16	6.4	30	6.6	42			7.0	58			6.4	16	6.4	14	6.2	10	6.1	5	6.4	6	6.4	13
10	6.0	16	6.4	35	6.6	42			7.0	58			6.4	14	6.4	14	6.2	10	6.1	5	6.4	6	6.2	13
15	6.2	23	6.8	60	6.4	42			6.8	58			6.4	19	6.4	14	6.2	10	6.1	5	6.4	6	6.2	13
20													6.2	19	6.4	14	6.0	6	6.0	5	6.0	5	6.0	13
0	6.2	16	6.6	30	6.6	42	6.8	50	7.1	58			6.4	14	6.2	14			6.1	5			6.4	13
5	6.2	16	6.4	30	6.6	42			7.1	58			6.4	15	6.4	14			6.1	5			6.4	13
10	6.0	16	6.2	30	6.6	42			7.0	50			6.4	8	6.4	14			6.1	4			6.2	13
15	6.6	60	6.6	60	6.4	42			6.8	60			6.4	11	6.4	14			6.1	4			6.1	13
20													6.4	15	6.4	14			5.8	4			6.0	18
0			6.6	30	6.8	42	6.8	50	7.0	55			6.4	14	6.2	14	5.7	8	6.1	4	6.4	7	6.4	14
5	6.0	19	6.2	30	6.8	42			7.0	58			6.4	19	6.2	14	5.7	8	6.1	4	6.4	6	6.4	11
10	6.3	19	6.0	60	6.6	42			6.8	58			5.0	10	6.2	14	5.7	8	6.1	4	6.2	5	6.2	15
15																	5.7	6	6.1	4	6.2	5		
0																	5.2	3			6.0	5	6.2	11
5																	5.2	3			6.0	5		

EXTREME
UPPER

UPPER END OF
OPEN WATER

MID LAKE

LOWER END NEAR
DAM

Table 2 : CHLORIDES AT DIFFERENT DEPTHS AND LOCATIONS ON LAKE STRICKER

Depth	UPPER END OF OPEN WATER					MID LAKE					LOWER END NEAR DAM													
	June	July	August	September	October	November	December	January	February	March	April	May	June	July	August	September	October	November	December	January	February	March	April	May
0		177.300	191.474	212.760	212.760		198.580	184.390	141.840	212.760	241.490	85.104		177.300	191.474	212.760	212.760		198.580	184.390	141.840	212.760	241.490	85.104
5	127.656	177.300	191.474		212.760		114.470	184.390	141.840	212.760	241.490	99.288		127.656	177.300	191.474		212.760	114.470	184.390	141.840	212.760	241.490	99.288
10	141.840	177.300	191.474		212.760		114.470	184.390	156.020	212.760	241.490	99.288		141.840	177.300	191.474		212.760	114.470	184.390	156.020	212.760	241.490	99.288
15	198.576	283.680	226.944		248.460		120.560	184.390	156.020	212.760	241.490	99.288		198.576	283.680	226.944		248.460	120.560	184.390	156.020	212.760	241.490	99.288
20							114.470	184.390	156.020	241.130	241.490	106.380							114.470	184.390	156.020	241.130	241.490	106.380
0	127.656	177.300	191.474	212.760	212.760		163.120	184.390		283.680		85.104		127.656	177.300	191.474	212.760	212.760	163.120	184.390		283.680		85.104
5	127.656	177.300	191.474		212.760		114.460	184.390		212.760		85.104		127.656	177.300	191.474		212.760	114.460	184.390		212.760		85.104
10	127.656	177.300	191.474		212.760		127.660	184.390		283.680		92.196		127.656	177.300	191.474		212.760	127.660	184.390		283.680		92.196
15	425.520	212.760	191.474		248.460		137.750	197.570		212.760		99.288		425.520	212.760	191.474		248.460	137.750	197.570		212.760		99.288
20							92.200	197.570		212.760		120.564							92.200	197.570		212.760		120.564
0		177.300	191.474	212.760	212.760		120.560	184.390	226.940	219.850	255.310	85.104			177.300	191.474	212.760	212.760	120.560	184.390	226.940	219.850	255.310	85.104
5	163.116	177.300	191.474		212.760		120.560	184.390	226.940	219.850	255.310	85.104		163.116	177.300	191.474		212.760	120.560	184.390	226.940	219.850	255.310	85.104
10	163.116	283.680	191.474		212.760		127.660	212.760	226.940	283.680	255.310	85.104		163.116	283.680	191.474		212.760	127.660	212.760	226.940	283.680	255.310	85.104
15									177.300	219.850	255.310										177.300	219.850	255.310	
0							212.760	390.060	390.060		255.310	120.564							212.760	390.060	390.060		255.310	120.564
5								390.060			255.310										390.060		255.310	

EXTREME
UPPERUPPER END OF
OPEN WATER

MID LAKE

LOWER END NEAR
DAM

Table 3 : TEMPERATURES AND DISSOLVED OXYGEN AT DIFFERENT DEPTHS AND LOCATIONS ON LAKE STRIKER

TEMPERATURE IN DEGREES FAHRENHEIT, DISSOLVED OXYGEN IN PARTS PER MILLION

Depth	June 11		July 11 9:40a		August 12 3:00p		September 10 2:45p		October 10 2:55p		November		December 10 2:30p		January 14 1:45p		February 12 2:00p		March 10 2:45p		April 10 2:45p		May 12 3:35p		
	T	DO	T	DO	T	DO	T	DO	T	DO	T	DO	T	DO	T	DO	T	DO	T	DO	T	DO	T	DO	
0	77.5		97.4	7.0	86.7	3.6	81.3	5.8	75.6	7.0				54.7	7.2	50.0	5.2	46.1	11.1	56.1	6.0	62.6	10.0	82.8	7.6
5	79.9		92.1	6.0	83.1	3.6	80.2		74.8	8.0				52.9	5.8	48.9	10.4	46.8	10.2	55.8	5.4		10.0	76.1	7.0
10	78.8		83.8	2.0	82.8	3.4	79.9		74.5	7.6				52.2	10.0	48.6	8.4	46.8	9.0	54.7	7.8		10.0	73.4	5.6
15	76.6		78.0	1.2	76.3	3.0	79.5		73.0	6.0				52.2	9.2	48.2	8.8	46.8	8.4	54.7	8.0		9.4	68.4	5.2
20														51.4	7.8	48.2	6.8	46.2	10.8	54.7	9.0		6.2	72.3	4.0
0	84.0		96.8	5.6	84.9	4.6	81.3	6.4	73.8	6.8				53.6	7.2	50.0	10.2			77.0	8.4			81.0	8.2
5	83.1		88.5	7.8	83.9	3.6	80.2		73.8	7.6				51.8	6.2	49.6	8.2			76.8	8.0			75.6	6.2
10	79.9		87.1	3.8	82.8	3.0	79.9		72.7	7.6				51.6	6.4	48.9	8.6			56.5	9.8			70.5	6.0
15	77.0		81.3	1.0	82.0	4.6	79.7		72.7	6.2				51.6	8.8	48.6	7.0			56.1	7.8			57.6	5.0
20														51.1	5.6	48.2	10.0			55.0	8.0			56.6	3.0
0	87.0		96.8	7.0	86.0	6.5	82.8	6.4	74.1	8.0				53.6	8.0	50.0		45.7	12.6	57.9	6.0	63.0	9.0	79.5	5.2
5	87.1		87.8	3.4	84.9	6.4	79.2		72.3	6.6				51.8	11.6	49.6	8.4	46.0	7.0	57.2	8.0	63.0	6.4	74.1	4.8
10	87.8		83.8	2.6	83.7	6.4	78.8		72.3	6.4				51.4		49.6	9.2	45.9	9.4	56.5	8.4	62.6	5.4	68.7	3.8
15														51.4	8.4			45.9	10.2	56.1	6.0	62.4	5.4		
AIR	93.0		99.0		94.6		92.5		80.0					72.0		64.4		43.2		75.0		60.0		86.0	

UPPER END

MID LAKE

LOWER END NEAR DAM

Table 4 : SALINITY AND PH OF SOME TRIBUTARY STREAMS OF LAKE STRIKER, APRIL 7, 1958

No.	Stream	Location (Distance in airline miles)	pH	Cl	Remarks
1	Striker Creek	US 79 crossing, 6.3 miles ENE New Summerfield	5.5	262.40ppm	
2	Willis Ditch	County Road, 6.5 miles NE New Summerfield	6.3	21.28	Normal for area
3	Bowles Creek	County Road, 3.6 miles ESE Concord	5.2*	574.45	*indicates the pH is less than what is shown
4	Johnsons Creek	County Road, 5 mi. E. Concord	6.5	156.02	
5	Johnsons Creek	SH 259, 0.7 miles S Carlisle	5.6	127.66	
6	Johnsons Creek	FM 13, 1.6 miles ENE Carlisle	5.2	198.58	Oil sludge on bank
7	Striker Creek	FM 13, 2.9 miles SW Carlisle	5.2	670.98	
8	East Tributary to Striker Creek	County Road off SH 259, 1 mile NW Carlisle	6.2	347.51	
9	Wilshire Creek	FM 16, 2.9 miles WNW Turner Town	5.2*	1390.03	
10	Striker Creek	FM 16, 1.1 miles NE Salem	5.2*	574.45	
11	North Fork Striker Creek	0.8 miles off FM 16 on County Road, 1.5 miles NNE Salem	5.2*	326.23	
12	South Fork Striker Creek	County Road off FM 16, 1.1 miles NW Salem	5.2	28.37	
	Striker Creek	County Road, 1.8 miles E Salem	5.2*	397.15	

Table 5 : A CHECKLIST OF LAKE STRIKER SPECIES

I. Family LEPISOSTEIDAE - Gars

1. Lepisosteus productus - spotted gar

II. Family AMIIDAE - Bowfins

2. Amia calva - bowfin

III. Family CLUPEIDAE - Herrings

3. Dorosoma cepedianum - gizzard shad

IV. Family ESOCIDAE - Pickerals

4. Esox americanus - grass pickeral

V. Family CATOSTOMIDAE - Suckers

5. Moxostoma poecilurum - blacktail redhorse
6. Minytrema melanops - spotted sucker
7. Erimyzon sucetta - lake chubsucker

VI. Family CYPRINIDAE - Shiners and minnows

8. Cyprinus carpio - carp
9. Notemigonus crysoleucas - golden shiner
10. Notropis fumeus - ribbon shiner
11. N. umbratilis - redbfin shiner
12. N. brazosensis - Brazos River shiner
13. N. roseus - weed shiner
14. N. blennius - river shiner
15. N. venustus - spottail shiner
16. N. lutrensis - redhorse shiner
17. N. deliciosus - sand shiner
18. N. atrocaudalis - blackspot shiner
19. N. volucellus - mimic shiner
20. Pimephales vigilax - parrot minnow

VII. Family AMEIURIDAE - Freshwater catfishes

21. Ictalurus punctatus - channel catfish
22. I. melas - black bullhead
23. I. natalis - yellow bullhead

VIII. Family CYPRINODONTIDAE - Topminnows

24. Fundulus chrysotus - redspot topminnow
25. F. notatus - blackstripe topminnow

Table 5 (CONTINUED) A CHECKLIST OF LAKE STRIKER SPECIES

IX. Family POECILIIDAE - Mosquitofish

26. Gambusia affinis - gambusia

X. Family ATHERINIDAE - Silversides

27. Labidesthes sicculus - brook silversides

XI. Family CENTRARCHIDAE - Basses and sunfishes

28. Micropterus salmoides - largemouth bass29. Chaenobryttus gulosus - warmouth30. Lepomis cyanellus - green sunfish31. L. punctatus - spotted sunfish32. L. microlophus - redear sunfish33. L. macrochirus - bluegill34. L. auritus - yellowbelly sunfish35. L. megalotis - longear sunfish36. Pomoxis annularis - white crappie37. P. nigromaculatus - black crappie

XII. Family PERCIDAE - Darters

38. Etheostoma gracilie - slough darter

Table 6: Tabulation of Monthly Netting Results on Lake Striker

No.	Species	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Total	%
1	<i>Lepisosteus productus</i>	7	2	10	6	9					6	2	13	55	2.87
2	<i>Amia calva</i>	1			1	1								3	0.15
3	<i>Dorosoma cepedianum</i>	1	26	37	67	36		64	49	7	116	68	103	574	29.92
4	<i>Esox americanus</i>										3			3	0.15
5	<i>Moxostoma poecilurum</i>	1		3								2		6	0.31
6	<i>Minytrema melanops</i>	4			1	1		8	33	24	15		5	91	4.75
7	<i>Erimyzon sucetta</i>					9		35	17	18	45	21	5	150	7.82
8	<i>Cyprinus carpio</i>		1	8	16	9			3	2	7	3	6	55	2.87
9	<i>Ictalurus punctatus</i>												5	5	0.26
10	<i>I. melas</i>	7	28	31	26	8		14	38	20	53	36	63	324	16.89
11	<i>I. natalis</i>		7	24	17	21		8	16	6	10	13	53	175	9.12
12	<i>Micropterus salmoides</i>	3	9	28	23	18		12	13	7	13	6	17	149	7.76
13	<i>Chaenobryttus gulosus</i>	1	9	28	6	1					2		11	58	3.02
14	<i>Lepomis punctatus</i>		8	41	1							2		52	2.70
15	<i>L. macrochirus</i>	7	10	66	1	1			1		1	6	38	131	6.83
16	<i>L. auritus</i>	3	12	14	2								4	35	1.82
17	<i>L. megalotis</i>										1		3	4	0.20
18	<i>Pomoxis annularis</i>		1										2	3	0.15
19	<i>P. nigromaculatus</i>		3	2	4	4		10	3	7	3	5	4	45	2.34
	Total	35	116	292	171	118	0	151	173	91	275	164	332	1918	
	Game Fish Numbers	14	52	179	37	24		32	17	14	20	19	24	492	
	Rough Fish Numbers	21	64	113	134	94		119	156	77	255	145	248	1426	
	Per cent Game Fish	40.00	44.83	61.30	21.64	19.34		21.19	9.82	15.39	7.27	11.59	25.31	25.65	
	Percent Rough Fish	60.00	55.17	38.70	78.36	79.66		78.81	90.18	84.61	92.73	88.41	74.69	74.35	

Table 7 : TABULATION OF SEINING RESULTS ON LAKE STRIKER

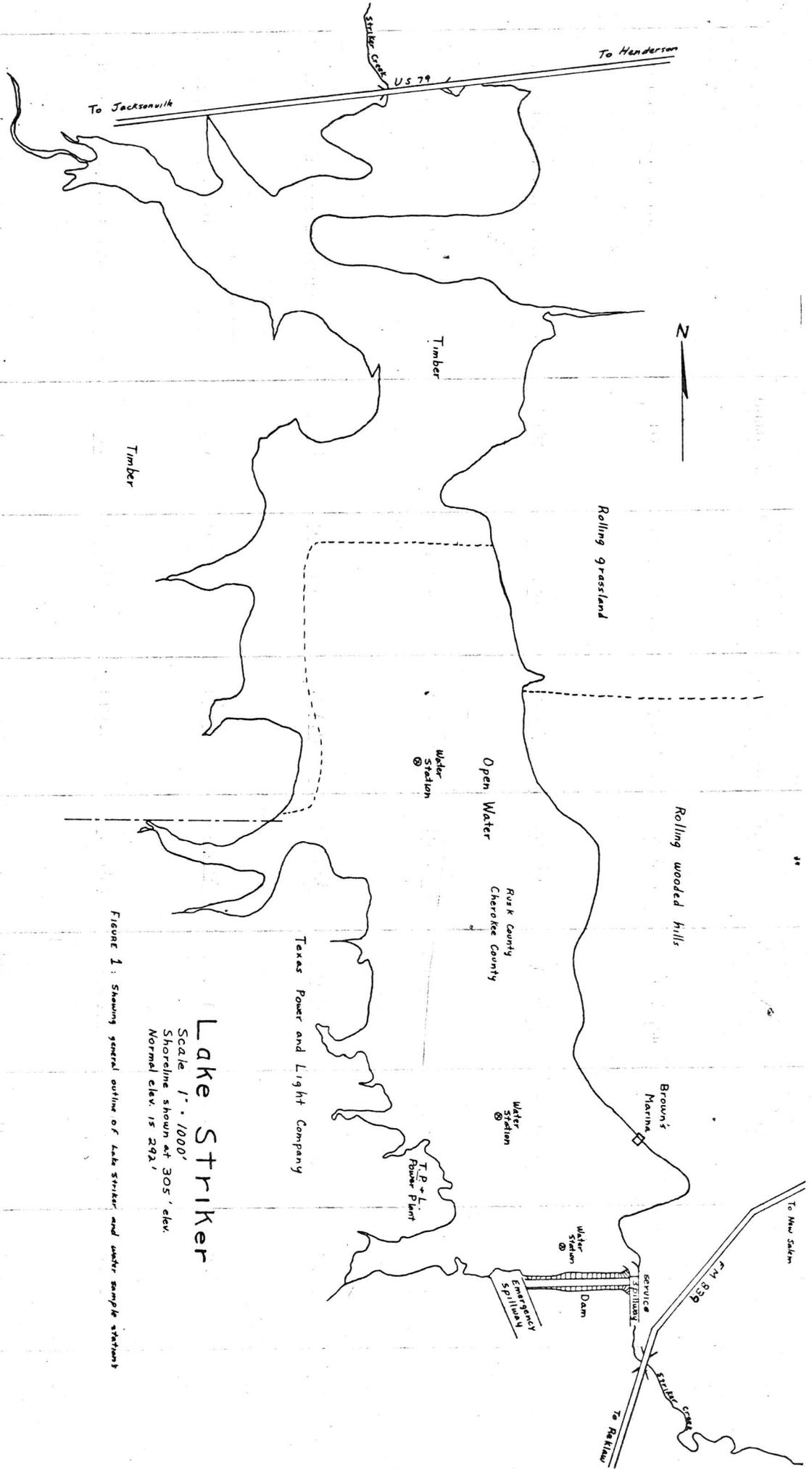
No.	Species	June	July	Aug.	Sept.	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Total
1	<i>Dorosoma cepedianum</i>			5	3	6							5	19
2	<i>Esox americanus</i>	1				1								2
3	<i>Notemigonus crysoleucas</i>	14	32	59		297		15				32		449
4	<i>Notropis fumeus</i>		20	181	327								2	530
5	<i>N. umbratilis</i>								109					109
6	<i>N. brazosensis</i>											1		1
7	<i>N. roseus</i>	34	3	14	1									52
8	<i>N. blennius</i>	1												1
9	<i>N. venustus</i>	1	15	186	68	97		4	42			23	36	472
10	<i>N. lutrensis</i>		5	101	8	18		1				18	19	170
11	<i>N. deliciosus</i>	13	6	15		14			16			34		98
12	<i>N. atrocaudalis</i>			5		2								7
13	<i>N. volucellus</i>												2	2
14	<i>Pimephales vigilax</i>			9		12			48			19	14	102
15	<i>Ictalurus melas</i>	18		1										19
16	<i>I. natalis</i>	4												4
17	<i>Fundulus chrysotus</i>		5	6	2	14							2	29
18	<i>F. notatus</i>	3	1	14		40						1	18	77
19	<i>Gambusia affinis</i>	302	7	29	74	16						5		433
20	<i>Labidesthes sicculus</i>	1		15	442	3299		3	213			63	49	4085
21	<i>Micropterus salmoides</i>	24	1	1									1	27
22	<i>Chaenobryttus gulosus</i>		6											6
23	<i>Lepomis cyanellus</i>	118		2	2							2		124
24	<i>L. punctatus</i>		5	8	9							6	8	36
25	<i>L. microlophus</i>		1										3	4
26	<i>L. macrochirus</i>	8	112	77	42	117			2			34	69	461
27	<i>L. megalotis</i>			1										1
28	<i>Etheostoma gracilie</i>				2									2
	Total	542	219	729	980	3933		23	430			238	228	7322
	Number of Species	14	14	19	12	13		4	6			12	13	28

Table 8: Standard Lengths in Millimeters of Some Species Showing Growth

	Jun	Jul	Aug	Sep	Oct	Nov	Dec.	Jan	Feb	Mar	Apr	May
Largemouth Bass	Numbers	24	8	20	22	16	12	13	7	18	6	13
	Range	24-81	81-150	140-172	139-296	153-248	208-320	187-355	237-298	153-282	160-345	158-400
	Average	43.5	134.1	159.3	196.0	202.8	250.0	255.4	291.5	238.1	225.0	260.9
Bluegill	Numbers	25	25	25	25	25		1			4	20
	Range	15-27	17-47	16-49	13-125	16-46		130			92-130	95-144
	Average	21.0	28.5	30.0	32.5	26.2		130			105.7	127.2
Warmouth	Numbers	25	7		7	1				6		9
	Range	10-34	14-44		95-150	110				130-164		110-175
	Average	22.4	24.9		121.4	110				144.8		150.9
Spotted Sunfish	Numbers		4	8	9						1	22
	Range		24-38	29-47	25-59						106	
	Average		33.5	37.6	42.9						106	
Yellowbelly Sunfish	Numbers	10			2							4
	Range	18-39			110-125							124-132
	Average	27.6			117.5							127.1
Black Bullhead	Numbers	20	1	3	18	8	14	25	22	20	20	20
	Range	20-64	50	50-125	118-297	102-265	140-297	126-315	132-260	132-310	130-300	135-275
	Average	27.7	50	100.0	177.1	187.5	195.1	156.4	165.0	185.6	176.0	170.9
Yellow Bullhead	Numbers	4		2	17	20	3	14	5	15	11	20
	Range	22-25		106-138	99-248	123-254	90-236	149-262	178-345	151-192	150-292	140-320
	Average	24.0		122.0	175.1	143.1	160.8	178.6	218.6	165.2	178.3	188.8

Table 9 : DATA ON CONDITION OF NETTED FISH FROM LAKE STRIKER

Species	Numbers	Standard Length Range	Average SL	Weight Range	Average Weight*	"K" Range	Average "K"
<i>Ictalurus melas</i>	163	110-315 mm	155.8 mm	30-427 gm	204.7 gms	1.73-3.92	2.35
<i>Ictalurus natalis</i>	112	90-320	150.7	22-907	177.8	1.76-3.50	2.40
<i>Micropterus salmoides</i>	142	81-400	225.6	15-1814	332.8	1.84-3.80	2.69
<i>Chaenobryttus gulosus</i>	58	95-175	127.5	44-244	99.8	3.71-6.07	4.73
<i>Lepomis auritus</i>	29	92-132	127.1	40-123	100.7	4.55-7.01	5.83
<i>Lepomis macrochirus</i>	65	91-144	119.2	32-143	92.3	3.40-7.00	4.81
<i>Lepomis punctatus</i>	41	88-109	69.8	32-66	46.7	3.91-6.47	4.69
<i>Pomoxis annularis</i>	3	144-234	187.0	120-434	235.7	2.50-4.00	3.29
<i>Pomoxia nigromaculatus</i>	41	105-308	159.4	40-765	155.4	2.66-4.73	3.49



Lake Striker
 Scale 1" = 1000'
 Shoreline shown at 305' elev.
 Normal elev. is 292'

Figure 1: Showing general outline of Lake Striker and water sample stations

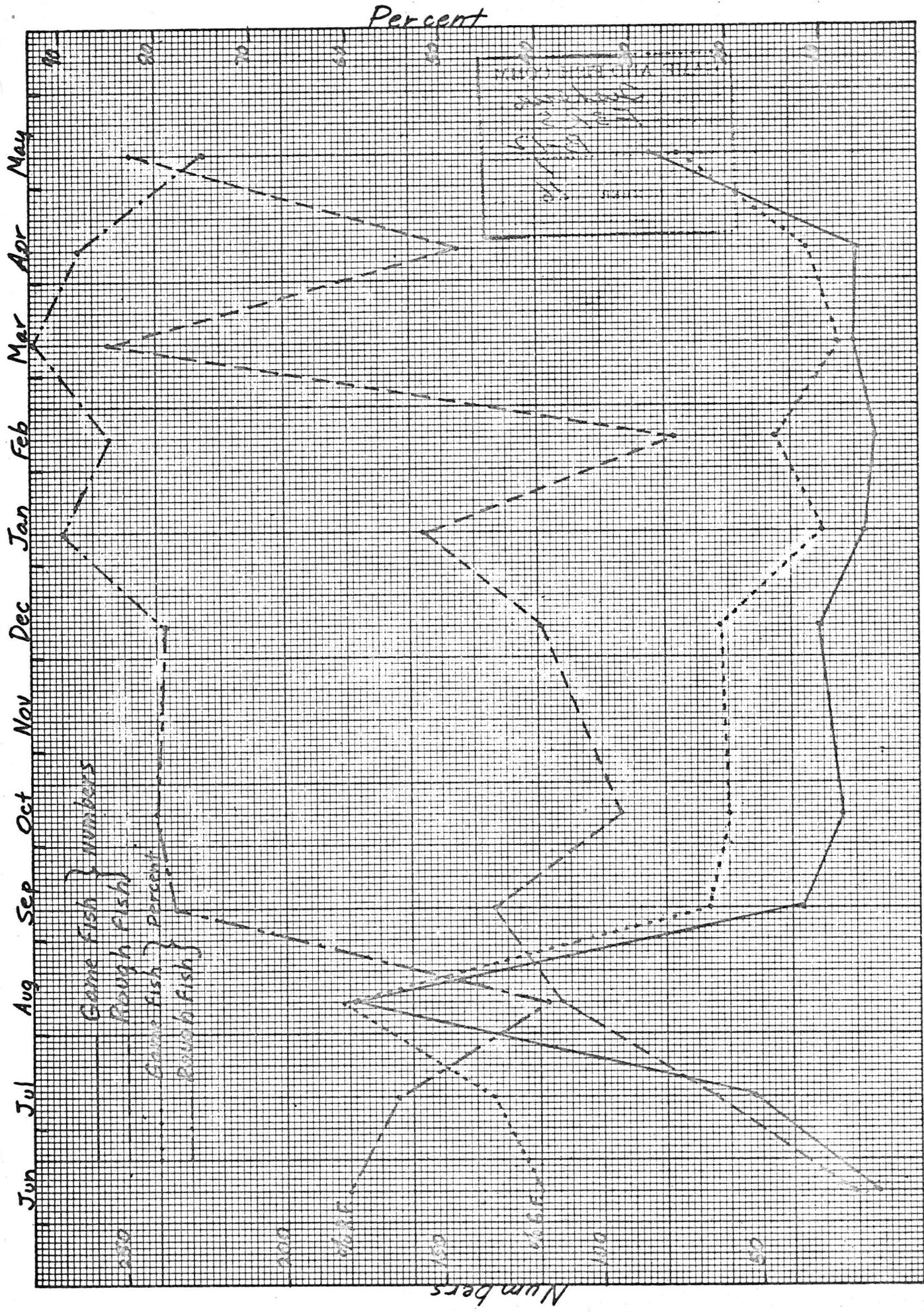


FIGURE 2: A comparison of game fish - rough fish catch of gill nets by numbers and percent.

Standard Lengths in millimeters

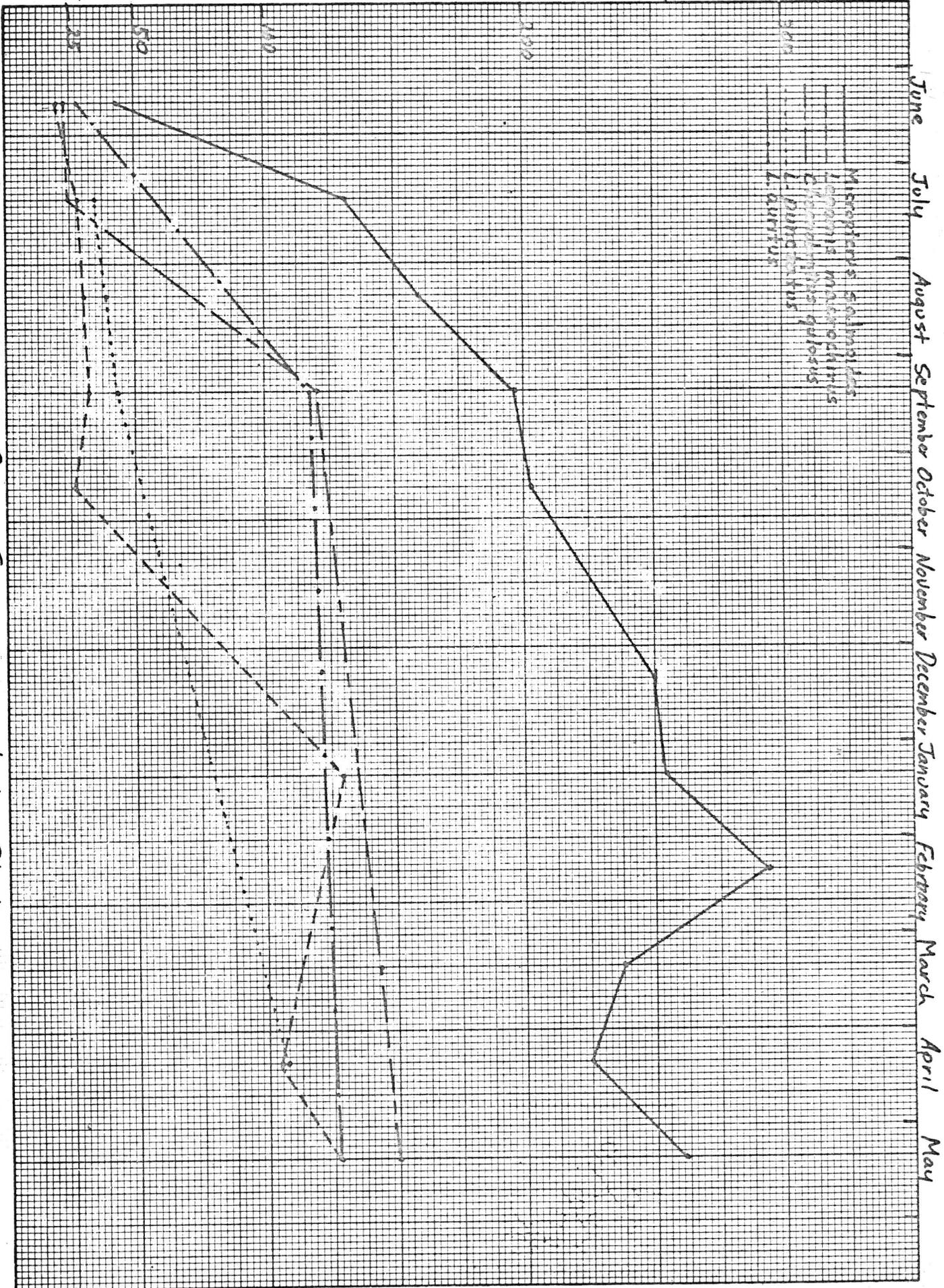


FIGURE 3: Growth of Game Species in Lake Striker

Standard Lengths in millimeters

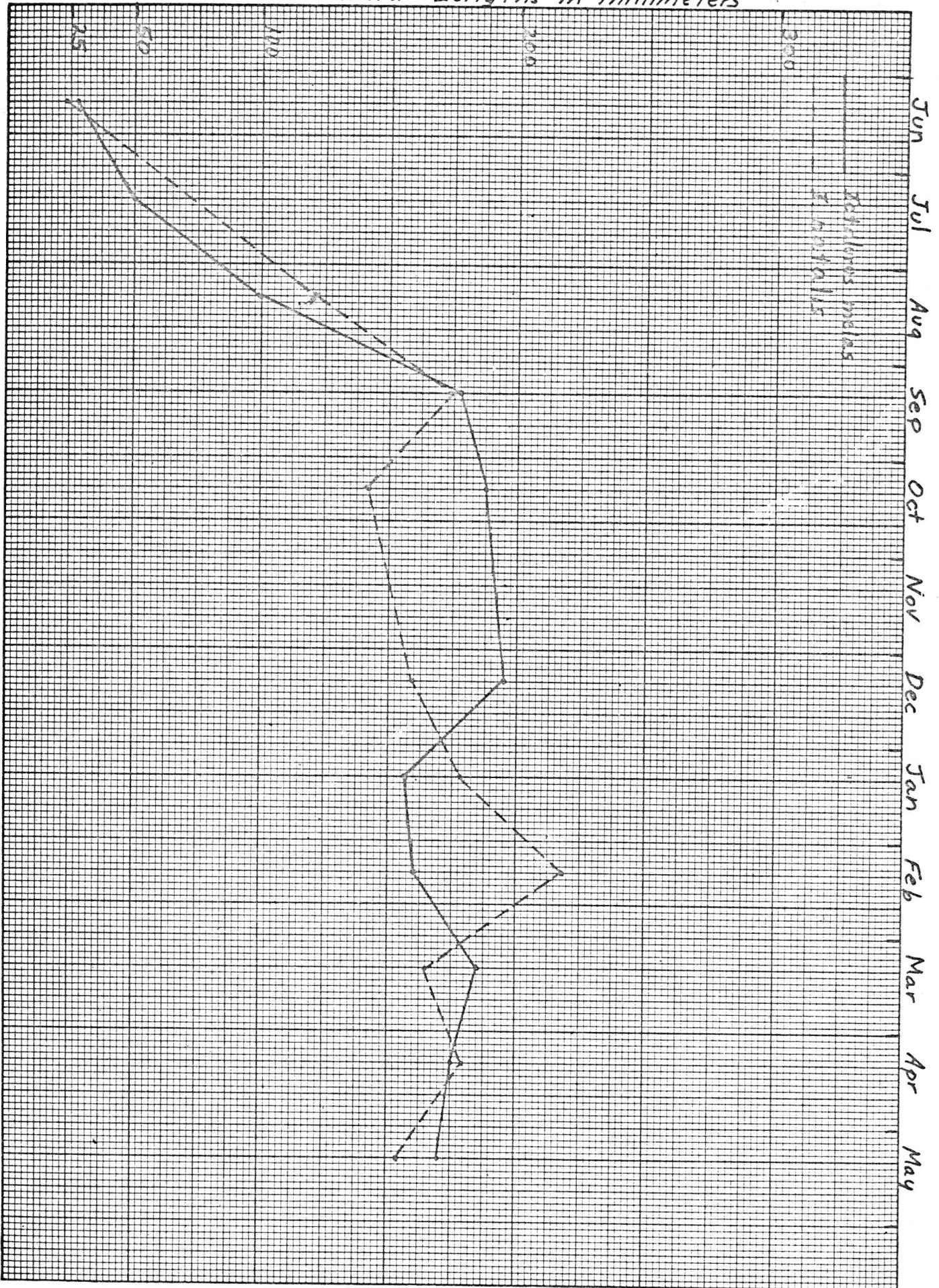


FIGURE 4 : Growth of Important Commercial Species in Lake Striker

Figure 4: Growth of Invasive Species in Lake Striker



Photo 1: Lake Striker Dam looking west. Service spillway and gates on this end, emergency spillway on other end.



Photo 2: East shore of Lake Striker from upper end of open water looking south toward the dam.



Photo 3: Nets were set in the evening...



Photo 4: ...and picked up the following morning.

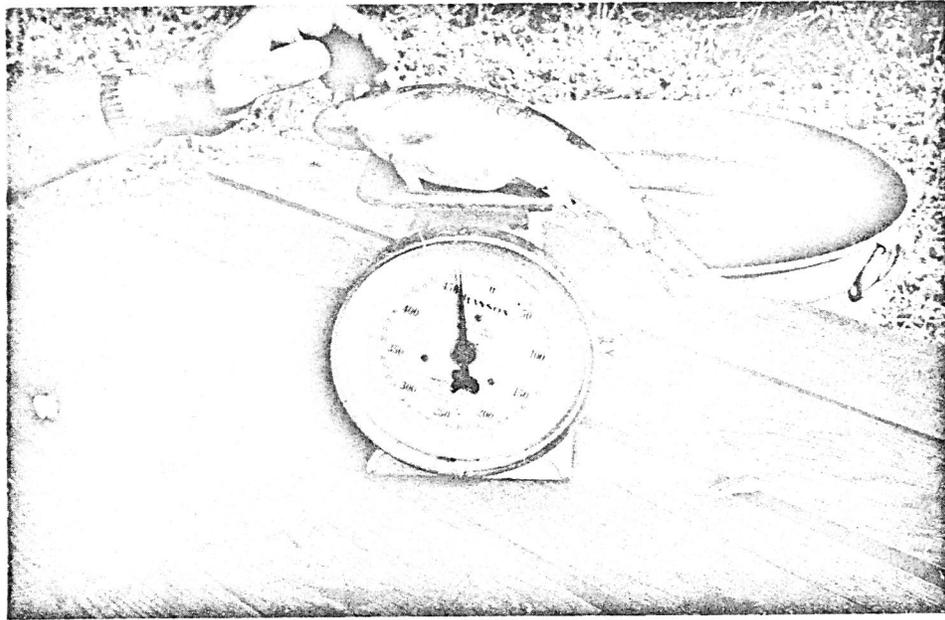


Photo 5: The game fish were weighed...



Photo 6: ...and measured. This is a five months bass.



Photo 7: Upper end of the open water looking north toward some of the inundated timber.

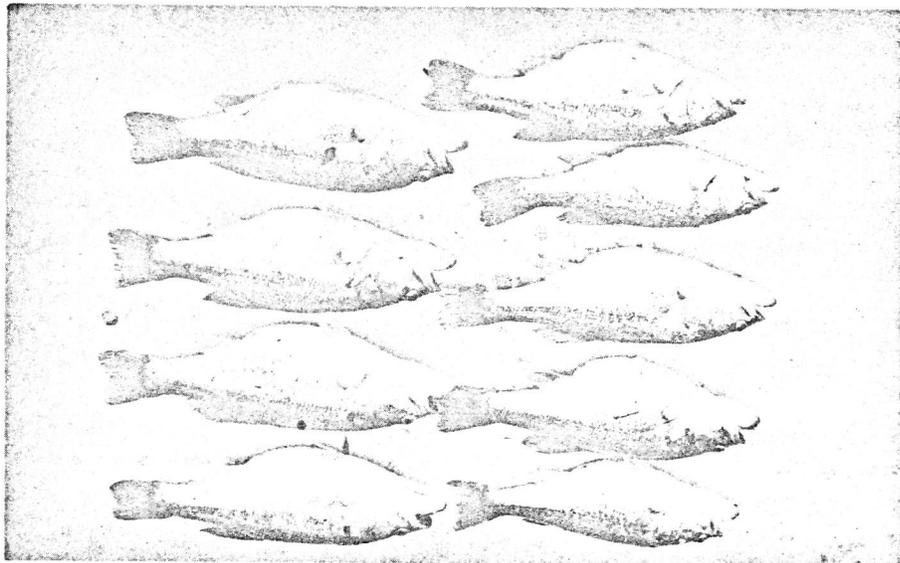


Photo 8: Typical 10 months bass from Lake Striker. These average about 12 inches total length. (All photos by author)